

Environmental Resources

OVERVIEW

This Plan updates the 1992 Plan with specific recommendations for the Twinbrook Plan area that reflect the latest policies on smart growth, stormwater management, recycling, green building, and green urbanism. The Plan's recommendations respond to the particular conditions and opportunities in Twinbrook and encourage the use of emerging technologies that can contribute to the area's environmental quality. These efforts build sustainability by decreasing the use of non-renewable energy sources, encouraging sustainable best management practices, creating pedestrian and transit access, promoting stormwater infiltration, and improving air quality.

This Plan recognizes Twinbrook's dense, developed character and through rezoning and redevelopment, strives to improve environmental sustainability. The Plan's recommendations address both environmental function – primarily air and water quality – and the community's appearance by incorporating features such as green open spaces and tree-planting, into land use, transportation, park, and urban design recommendations. Redevelopment of the area should create a recognizably green setting in function and appearance where residents and employees can walk between work and transit and to community services and retail.

Metro station locations such as Twinbrook already create environmental benefits by redeveloping built environments, using existing infrastructure with proximity to transit, and thereby containing the impacts of development.

This Plan's environmental goal is to move beyond the benefits of the location by encouraging green building and site design. It recommends the TOMX Zones that introduce mixed uses with Metro proximity, increase green space requirements, a requirement for site plan review, and encourage complementary environmental and urban design improvements.

OBJECTIVES

- Increase pervious surface to improve the quality and reduce the quantity of stormwater run-off, mitigate heat island effects, and contribute to a green and pedestrian-friendly environment.
- Encourage on-site stormwater management techniques that make best use of new technologies suited for dense, urban environments.
- Buffer noise through building placement, site design, and urban design features.
- Improve air quality through development decisions that increase tree canopy, pervious surfaces, and the use of reflective materials that decrease automobile use, and that encourage the use of renewable energy sources.
- Encourage energy efficiency by encouraging development decisions through every phase of planning, building and site design, construction, and operation.

EXISTING CONDITIONS

Twinbrook has changed significantly from its original natural state and from its early development as a 19th century railroad village to become a center of office and light industrial uses along a busy rail line. Its continuing evolution with mixed-use redevelopment should contribute to restoring portions of natural function and appearance as sites are redeveloped.

The Plan area is approximately 80 percent impervious with a majority of the imperviousness devoted to automobile use (42 percent surface parking lots and 11 percent roads). This imperviousness has allowed uncontrolled run-off that contributes to poor water quality in the Rock Creek watershed. Between 1951 and 1970, the area's streams were buried and piped to accommodate development. This left no open streams in the Plan's area and contributed to erosion and poor water quality in the nearby Rock Creek mainstem.

The Environmental Protection Agency (EPA) has designated Montgomery County an area that does not meet minimum air quality standards and it recently downgraded the County's air quality from serious to severe air pollution, due in large part to heavy automobile use. The EPA has also issued six air emissions permits in the Twinbrook Plan area, which allow monitoring and mitigation of local air pollution sources.

Twinbrook also has significant noise volumes from a variety of sources including Twinbrook Parkway and other roads, and from the Metro and CSX service on the rail tracks. Once built, the Montrose Parkway East will be another source of noise. Although a certain level of noise is inevitable in urban locations, targeted mitigation can reduce overall noise levels.

The pedestrian system proposed in this Plan is intended to have a transportation function – connecting to Metro and other parts of the planning area, and a design function – creating and connecting public spaces. The pedestrian system also has an environmental function in encouraging walking that replaces short auto trips and adding more opportunities for tree planting and pervious surfaces.

Most Twinbrook streets have sidewalks, although they are often narrow, unshaded, cluttered with street furniture, unprotected from auto traffic, and pass by blank building facades or parking lots. This Plan strives to create an improved pedestrian network that encourages walking.

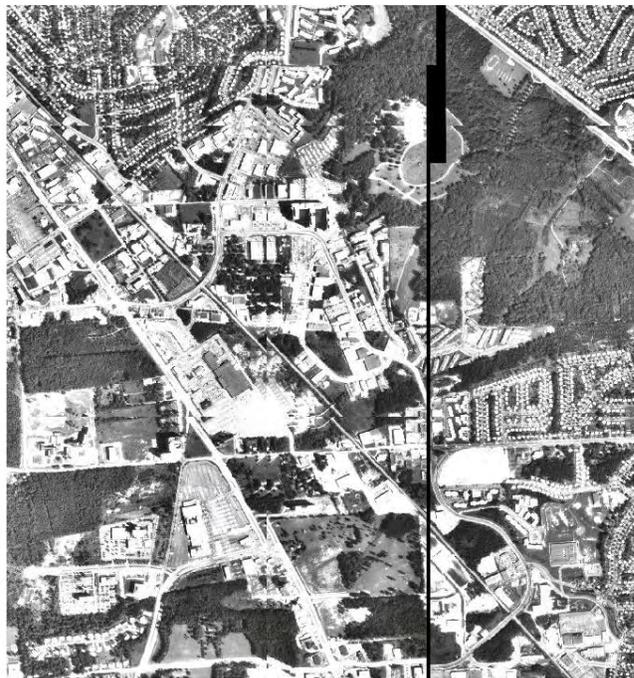
The 20 percent public use space requirement of the TOMX Zones is a significant increase over the 10 percent required by current zones. Recommended for 60 acres of the Plan's total 154 acres, it will generate 12 acres of visible and accessible open space. The recommendation that 85 percent of that public use space be pervious will create roughly ten acres of high quality pervious ground that is well located to serve environmental and design purposes. Further, the zones' requirement for streetscaping and the recommendations for planting street trees in panels will add more pervious surface.

Twinbrook also has environmental advantages; its proximity to Metro makes it ideal for transit-oriented redevelopment. Nationally recognized environmental building standards award points for many features of proposed redevelopment in Twinbrook, including proximity to transit and use of existing infrastructure at a higher intensity.

Environmental Change



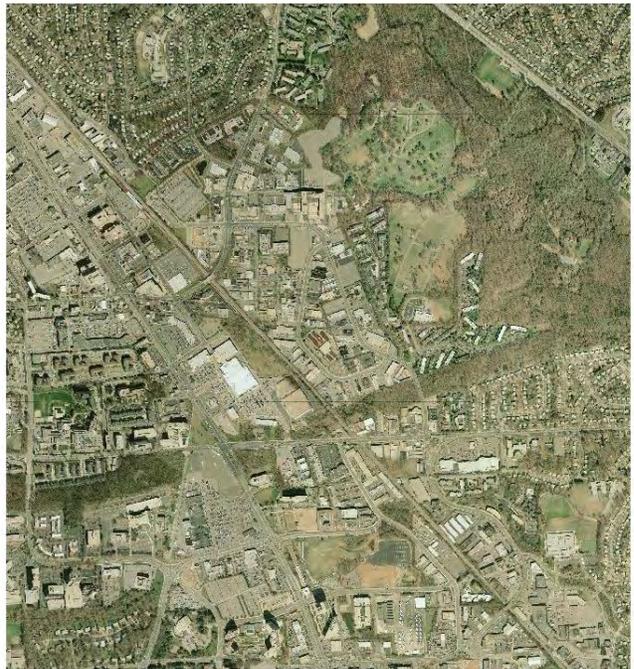
1950



1970



1979



2000

RECOMMENDATIONS

These recommendations are based on Twinbrook's specific environmental opportunities and should be applied in combination with land use, park, transportation, and urban design guidelines for green streets, trails, pedestrian and transit services, parks, and open spaces.

Pervious Surface/Water Quality

Redevelopment will generate new site layouts and re-use of parking lots, creating an opportunity for more pervious surface, contributing to improved air and water quality.

- Require that 85 percent of the proposed public uses spaces recommended for Fishers Lane and Parklawn Drive be pervious surface.
- Allow decreased street pavement width on new streets on the redeveloped sites in favor of pervious surface to control stormwater runoff from roads.
- Support urban design recommendations for green and pervious public spaces and for a streetscape plan that includes massed tree plantings and significant green spaces.
- Create a connected system of usable green open space retreats along pedestrian routes, including parks along Fishers Lane and Parklawn Drive, a mid-block connection between those streets, the historic cemetery.
- Require redevelopment of Area 5 to set aside open space that marks the proposed trail connection, provides green space within the Plan area, and further buffers the adjacent stream.
- In locating the proposed Wilkins Avenue extension, prevent additional stream or stream valley buffer road crossings.

Stormwater Management

Although Twinbrook's natural water flow has been long altered, redevelopment in urban areas with increased density can offer opportunities to apply new technical solutions to treating the quality and quantity of stormwater run-off.

- Encourage on-site building and site design solutions to hold and filter stormwater, following Division of Permitting Service's preference for on-site percolation that replicates the natural hydrologic system.
- Encourage public and private projects to use emerging technologies in building, site, and road design that incorporate stormwater treatment features into urban design and streetscape options. They can include, but not be limited to: green streets, water features that buffer noise and capture stormwater, graywater cisterns, and open spaces that can capture, reuse, and filter stormwater.
- Incorporate stormwater management into required green spaces, using it as a design feature and making it accessible for maintenance.
- Encourage green roofs. They are proven to help mitigate heat island effect, to help filter and retain stormwater runoff, and improve air quality through transpiration.

Noise

Noise is inevitable in an urban environment, especially along busy streets and transit routes. Redevelopment can buffer and minimize noise impacts to contribute to a more comfortable pedestrian environment.

- Encourage site and building design that locates public and other occupied spaces away from noise sources.
- Design public amenities, like parks, open spaces, and water features, that further buffer noise.
- Wherever possible, locate structured parking adjacent to Metro/MARC tracks to mitigate noise.
- Encourage new development to integrate noise mitigation measures at the earliest possible stage.

Air Quality

Small local decisions as well as larger policy efforts contribute to improving air quality. This Plan encourages redevelopment that can contribute to improving air quality.

- Support a safe and pleasant pedestrian and bicycle network that encourages residents and employees to replace short auto trips with walking, transit, and bicycling.
- Encourage building and site design features such as green roofs, reflective pavement, water features, and pervious surfaces that can modulate heat island effects.
- Encourage a significant portion of non-roof hardscape to be shaded within five years of occupancy or to be paved with reflective materials.
- Encourage open space to be planted and pervious.
- Encourage expanded bus shuttle service through the Plan area and to MD 355, using hybrid or alternative-fueled vehicles, to reduce short trips and diminish traffic congestion and vehicle emissions.
- Encourage street trees in the area to achieve 30 percent canopy coverage of redeveloped areas, as well as landscaping and other green elements in road and sidewalk design.

Energy Efficiency

- Encourage redevelopment projects to incorporate site design features that promote energy efficiency.
- Connect redevelopment projects to each other through public park, urban design, transportation, and urban design improvements to maximize pedestrian connections and environmental benefits.
- Encourage redevelopment projects to reduce energy use through site and building design and building operation decisions.